

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A system comprising memory including a computer code product for training computing devices for classification or identification purposes for one or more substances capable of producing olfactory information, the memory comprising:
 - a code directed to providing at least a first data ~~from a first substance~~ related to one or more substances from a first node and a second data ~~from a second substance~~ related to one or more substances from a second node to a computing device, the data being comprised of a plurality of characteristics to identify the substance, wherein the first node or the second node is connected over a computer network;
 - a code directed to normalizing at least one of the characteristics for each of the first data and the second data;
 - a code directed to correcting at least one of the characteristics for each of the first data and the second data;
 - a code directed to processing one or more of the plurality of characteristics for each of the first data and the second data in the computing device using pattern recognition to form descriptors to identify the one or more substances ~~first substance or the second substance~~; and
 - a code directed to storing the set of descriptors into a memory device coupled to the computing device, the set of descriptions being for analysis purposes of the one or a plurality of more substances and performing a combined analysis based on the first data and the second data.
2. (Original) The system of claim 1 wherein the characteristics can be selected from olfactory information, temperature, color, and humidity.
3. (Original) The system of claim 1 wherein the pattern recognition is a Fisher Linear Discriminant Analysis.

4. (Original) The system of claim 1 wherein the first data and the second can be selected from a transient stream of data or from a static source of data.
5. (Original) The system of claim 1 wherein the steps are performed continuously in the computing device.
6. (Original) The system of claim 1 wherein the data are captured from an array of olfactory sensors.
7. (Original) The system of claim 6 wherein the olfactory sensors are comprised of a polymer component.
8. (Original) The system of claim 1 wherein the first data and the second data are provided through a worldwide network of computers, the worldwide network of computers comprising the Internet.
9. (Original) The system of claim 1 wherein the first data and the second data are captured from a first sensor and a second sensor, respectively, disposed in an array.
10. (Original) The system of claim 1 wherein the first data and the second data are captured from a first sensor and a second sensor, respectively, disposed in an array and transported through the Internet.
11. (Original) A system including memory and computer codes for preprocessing information for identification or classification purposes, the system comprising:
 - a code directed to acquiring a voltage reading from a sensor of a sensing device, the sensor being one of a plurality of sensors that are disposed in an array;
 - a code directed to determining if the voltage is outside a baseline voltage of a predetermined range; and

a code directed to rejecting the sensor of the sensing device for use in acquiring sensory information, if the voltage is outside the predetermined range.

12. (Original) The system of claim 11 further comprising a code directed to repeating steps of acquiring and determining for any other sensors in the plurality of sensors in the array to detect a faulty sensor that is outside the predetermined range.

13. (Original) The system of claim 11 wherein each of the sensors in the array acquires a respective voltage reading simultaneously.

14. (Original) The system of claim 11 further comprising a code directed to exposing at least one of the sensors to a sample and acquiring a sample voltage from the sample.

15. (Original) The system of claim 11 further comprising a code directed to exposing at least one of the sensors to a sample and acquiring a sample voltage from the sample, if the sample voltage is outside a predetermined sample voltage range, reject the one exposed sensor.

16. (Original) The system of claim 11 wherein the plurality of sensors comprise an olfactory sensor, the olfactory sensor being comprised of a polymer component.

17. (Currently Amended) A system for classifying or identifying one or more substances capable of producing olfactory information, the method comprising:

a process manager;

an input module coupled to the process manager for providing at least a first data ~~from a first substance~~ related to one or more substances from a first node and a second data ~~from a second substance~~ related to one or more substances from a second node to a computing device, the data being comprised of a plurality of characteristics to identify the ~~substance~~ one

or more substances, wherein one or both of the first node and the second node is connected to the input module over a computer network;

a normalizing module coupled to the process manager for normalizing at least one of the characteristics for each of the first data and the second data;

a patterning recognition module coupled to the process manager for processing one or more of the plurality of characteristics for each of the first data and the second data in the computing device using pattern recognition to form descriptors to identify the ~~first substance or the second substance~~ one or more substances; and

an output module coupled to the main process manager for storing the set of descriptors into a memory device coupled to the computing device, the set of descriptions being for analysis purposes of the one or more a plurality of substances and performing a combined analysis based on the first data and the second data.

18. (Original) The system of claim 17 wherein the characteristics can be selected from olfactory information, temperature, color, and humidity.

19. (Original) The system of claim 17 wherein the pattern recognition is a Fisher Linear Discriminant Analysis.

20. (Original) The system of claim 17 wherein the first data and the second can be selected from a transient stream of data or from a static source of data.

21. (Original) The system of claim 17 wherein the steps are performed continuously in the computing device.

22. (Original) The system of claim 17 wherein the data are captured from an array of olfactory sensors.

23. (Original) The system of claim 22 wherein the olfactory sensors are comprised of a polymer component.

24. (Original) The system of claim 17 wherein the system is provided in a computer.

25. (Original) The system of claim 17 wherein the pattern recognition module comprises a plurality of pattern recognition algorithms.

26. (Original) The system of claim 17 further comprising a data storage device coupled to the main process manager.

27. (Original) The system of claim 17 further comprising a network module coupled to the main process manager, the network module being coupled to a worldwide network of computers.

28. (Original) The system of claim 17 further comprising a network module coupled to the main process manager, the network module being coupled to a world wide network of computers, the input module being coupled to a sensor device comprising a plurality of sensors through the world wide network of computers.

29. (Currently Amended) A method for training computing devices for classification or identification purposes for one or more substances capable of producing olfactory information, the method comprising:

providing at least a first data related to one or more substances from a first node ~~from a first substance~~ and a second data related to one or more substances from a second node ~~from a second substance~~ to a computing device, the data being comprised of a plurality of characteristics to identify the one or more substances, wherein the first node or the second node is connected over a computer network ~~substance~~;

normalizing at least one of the characteristics for each of the first data and the second data;

correcting at least one of the characteristics for each of the first data and the second data;

processing one or more of the plurality of characteristics for each of the first data and the second data in the computing device using pattern recognition to form descriptors to identify the one or more substances ~~first substance or the second substance~~; and

storing the set of descriptors into a memory device coupled to the computing device, the set of descriptions being for analysis purposes of the one or a plurality more of substances and for a combined analysis based on the first data and the second data.

30. (Original) The method of claim 29 wherein the characteristics can be selected from olfactory information, temperature, color, and humidity.

31. (Original) The method of claim 29 wherein the pattern recognition is a Fisher Linear Discriminant Analysis.

32. (Original) The method of claim 29 wherein the first data and the second can be selected from a transient stream of data or from a static source of data.

33. (Original) The method of claim 29 wherein the steps are performed continuously in the computing device.

34. (Original) The method of claim 29 wherein the data are captured from an array of olfactory sensors.

35. (Original) The method of claim 34 wherein the olfactory sensors are comprised of a polymer component.

36. (Original) The method of claim 29 wherein the first data and the second data are provided through a worldwide network of computers, the worldwide network of computers comprising the Internet.

37. (Original) The method of claim 29 wherein the first data and the second data are captured from a first sensor and a second sensor, respectively, disposed in an array.

38. (Original) The method of claim 29 wherein the first data and the second data are captured from a first sensor and a second sensor, respectively, disposed in an array and transported through the Internet.

39. (Currently Amended) A method for teaching a system used for analyzing multidimensional information for one or more substances, the method comprising:

providing a plurality of different substances from at least two nodes connected over a computer network, each of the different substances being defined by a plurality of characteristics to identify any one of the substances from the other substances, the plurality of characteristics being provided in electronic form;

providing a plurality of processing methods, each of the processing methods being capable of processing each of the plurality of characteristics to provide an electronic fingerprint for each of the substances;

processing each of the plurality of characteristics for each of the substances through a first processing method from the plurality of processing methods to determine a relationship between each of the substances through the plurality of characteristics of each of the substances from the first processing method; processing each of the plurality of characteristics for each of the substances through a second processing method to determine a relationship between each of the substances through the plurality of characteristics for each of the substances from the second processing method; and processing each of the plurality of characteristics for each of the substances through an nth processing method to determine a relationship between each of the substances through the plurality of characteristics from each of the substances from the nth processing method;

comparing the relationship from the first processing method to the relationship from the second processing method to the relationship from the nth processing method to find the

processing method that yields the largest signal to noise ratio to identify each of the substances; and

selecting the processing method that yielded the largest signal to noise ratio, whereupon the relationships from the selected processing method provide an improved ability to distinguish between each of the substances using the selected processing method.

40. (Original) The method of claim 39 wherein the plurality of processing methods can comprise a method selected from PCA, HCA, KNN CV KNN Prd, SIMCA CV, SIMCA Prd, Canon Prd, and Fisher CV.

41. (Original) The method of claim 39 wherein the characteristics can be selected from olfactory information, temperature, color, and humidity.

42. (Original) A method for preprocessing information for identification or classification purposes, the method comprising:

acquiring a voltage reading from a sensor of a sensing device, the sensor being one of a plurality of sensors that are disposed in an array;

determining if the voltage is outside of a baseline voltages of a predetermined range; and

if the voltage is outside of the predetermined range, rejecting the sensor of the sensing device for use in acquiring sensory information.

43. (Original) The method of claim 42 further comprising repeating steps of acquiring and determining for any other sensors in the plurality of sensors in the array to detect for a faulty sensor that is outside the predetermined range.

44. (Original) The method of claim 42 where each of the sensors in the array acquires a respective voltage reading simultaneously.

45. (Original) The method of claim 42 further comprising exposing at least one of the sensors to a sample and acquiring a sample voltage from the sample.

46. (Original) The method of claim 42 further comprising exposing at least one of the sensors to a sample and acquiring a sample voltage from the sample, if the sample voltage is outside of a predetermined sample voltage range, reject the one exposed sensor.

47. (Original) The method of claim 42 wherein the plurality of sensors comprise an olfactory sensor, the olfactory sensor being comprised of a polymer component.

48. (Currently amended) A system for identifying ~~a substance~~ one or more substances capable of producing olfactory information, the system comprising:

a user interface apparatus comprising a display, a graphical user interface, and a central processor that receives data related to the one or more substances from at least two nodes connected over a computer network; and

a process manager operably coupled to the display through the central processor, wherein the graphical user interface is capable of imputing an information object from a client to manipulate olfaction data and displaying the identity of the ~~substance received from a server~~ one or more substances and performing a combined analysis based on the received data from the at least two nodes.

49. (Original) The system of claim 48, wherein the information object is selected from the group consisting of digital filtering, preprocessing, pattern recognition, mean centering, autoscaling and cross validation.

50. (Original) The system of claim 49, wherein pattern recognition is selected from the group consisting of PCA, HCA, KNN CV KNN Prd, SIMCA CV, SIMCA Prd, Canon Prd, and Fisher CV.

51. (Currently amended) The method of claim 29 wherein the data from the first substance node and the second substance node is data obtained for shipping container monitoring.

52. (Currently amended) The method of claim 29 wherein the data from the first substance node and the second substance node is data obtained for perimeter monitoring.

53. (Currently amended) The method of claim 29 wherein the data from the first substance node and the second substance node is data obtained for explosive monitoring.

54. (Currently amended) The method of claim 29 wherein the data from the first substance node and the second substance node is data obtained for hazardous spill monitoring.

55. (Currently amended) The method of claim 29 wherein the data from the first substance node and the second substance node is data obtained for radiation monitoring.

56. (New) The system of claim 17, further comprising a database that comprises additional data for the combined analysis based on the first data and the second data.